

Do I have too much faith in science?

We live in a society where it's almost impossible to give science too much credit. Ever since the atom bomb and the space race, it's just been taken for granted that civilization advances through the progress of science. Science—we are told—grows our food, cures our diseases, creates our new technologies, and just generally propels the human race forward.

If science is the engine of progress, then those who have not been captured under its spell must be dusty relics of prejudice and caprice. Fields under the sway of hidebound tradition must be bulldozed and renovated in the image of science. Thus doctors, instead of making decisions by random whim, must be forced to practice “evidence-based medicine” where all their prescriptions are backed by randomized controlled trials. Policymakers, instead of just being bleeding-heart do-gooders, must temper their enthusiasm for regulation by doing cost-benefit analyses to see if their proposals make sense. Managers, instead of following their intuition, must subject their strategies to rigorous experiment—through A/B tests in the market.

But what's weird about this mania for science is how unscientific it all is. As far as I know, no studies have shown that evidence-based medicine leads to better patient outcomes or that companies which practice comprehensive A/B testing are more profitable than those which follow their intuition. And the evidence that science is responsible for stuff like increased life expectancy is [surprisingly weak](#).

But there's such a mania for science that even asking these questions seems absurd. How could there possibly be evidence against evidence-based medicine? The whole idea seems like a contradiction in terms. But it is not.

Recent decades have seen science encroach on the kitchen, with scientific approaches to cooking and cuisine. Where other chefs might simply follow instructions they found on a yellowing scrap of paper, the new modernists seek to understand the physics behind their actions. This approach has led to some interesting new techniques, but it's also led us to understand that some of those silly traditions aren't so silly after all.

Eggs, for example, were often beaten in copper bowls. Why copper bowls? Chefs might have been able to give you some kind of reason, but it would have sounded silly to scientific ears. But the modernists discovered that the ions in the copper ended up forming complex bonds with the conalbumin in the eggs.

This was not something that chefs had ever established as scientific knowledge—no aproned Isaac Newton ever discovered this was the right way to cook the eggs—but it was knowledge chefs had nonetheless. It was, in Polyani's phrase, tacit knowledge, part of the things society genuinely knew but was never able to write down or clearly prove.

Scientism systematically destroys tacit knowledge. If chefs were forced to follow “evidence-based cooking”, not using anything special like a copper bowl until there was a peer-reviewed double-blind randomized controlled trial proving its effectiveness, the result surely would be worse food. So why is it crazy to believe the same attitude leads to worse medicine?

In business, too, scientism could be quite destructive. Can Steve Jobs provide a proof for the rightness of every iPhone feature? Can Doug Bowman do a scientific experiment to [justify his every shade of blue](#)? Forcing them to could well make their work far worse instead of better.

Scientism even fails just within our own heads. If you're struggling with a decision, we're taught to approach it more “scientifically”, by systematically enumerating pros and cons and trying to weight and balance them. That's what Richard Feynman would do, right? Well, studies have shown that this sort of explicit approach repeatable leads to *worse* decisions than just going with your gut. Why? Presumably for the same reason: your gut is full of tacit knowledge that it's tough to articulate and write down. Just focusing on the stuff you can make explicit means throwing away everything else you know—destroying your tacit knowledge.

Of course, there's no guarantee that just trusting your gut will work either. Intuition and tradition are often just as wrong as scientific cluelessness. And in the cases where they genuinely have little to contribute, throwing them away (or quarantining it until it's proven by scientific test) might not be such a bad idea. But I've always just assumed that this was *always* true—that tradition and intuition had nothing to contribute, unless carefully coached by scientific practice. That science was the only way to get knowledge, rather than just another way of codifying it. Now, instead of throwing it all away, I'm now thinking I ought to spend more time finding ways to harness all that tacit knowledge.

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